



**VirtualScopics
Offering Private
Imaging Seminars**

We realize everyone's watching their travel budget, that's why we're bringing our imaging seminar to you.

Through the remainder of 2009, VirtualScopics is offering customers, and non-customers alike, the opportunity to have their own **private imaging for Clinical Trials seminar.**

Previous VirtualScopics seminars have been well attended and well received. However, many companies are only able to send 1 or 2 attendees. Through this offer you can bring in VirtualScopics to present to entire clinical teams, providing everyone with insight into selecting and implementing the appropriate imaging in multi-site clinical trials.

To learn more about these free seminars contact Erik Jensen at erik_jensen@virtualscopics.com.

Recent Publications

"Early DCE-MRI Findings Predict Tumor Volume Changes"

By Edward Ashton, PhD, As presented at ISMRM's 17th Annual Scientific Meeting and Exhibition, April 2009

[VirtualScopics' publications](#)

Ask Ed:

What are the relative advantages of FLT-PET and FDG-PET? Which should I use for my study?



**Ed Ashton, PhD
Chief Scientific Officer
VirtualScopics, Inc.**

¹⁸F-fluorodeoxyglucose (FDG) and ¹⁸F-fluorothymidine (FLT) are both useful tracers for staging cancers and for assessing their response to therapy. FDG is a glucose analogue. Because they have relatively high concentrations of glucose transporter proteins and hexokinase enzymes, many tumor types take up FDG readily, and the accumulation of FDG in a tumor can be used as a marker for cell density and viability. FLT, on the other hand, is used in DNA synthesis, and is taken up during cell division. FLT uptake therefore provides a "mitotic index" which can reflect the rate of proliferation within a tumor.

When deciding which of these tracers is appropriate for a given study, it is important to know the primary tumor types that are expected, as well as where metastases are expected to form. FDG-PET is limited in that certain tumor types (most prominently prostate cancer) are generally not FDG-avid. Also, some normal tissues (neural tissue in particular) take up FDG nearly as rapidly as tumors, making FDG less useful for assessing brain metastases. Macrophages are also FDG-avid, with the result that it is often difficult to distinguish between malignancy and infection in FDG scans. FLT avoids these problems, but it is taken up at a high rate by normal liver tissue, making it difficult at times to identify liver metastases in an FLT scan.

Cost and availability must also be considered when deciding between FDG and FLT. FLT availability is rapidly improving, but is still largely limited to major research centers. FLT is also significantly more expensive than FDG, with the result that the cost of a typical FLT scan is 1.5 - 2X that of a comparable FDG scan.

VirtualScopics Growing Further in Europe

In order to enhance the service we provide to our expanding European-based sponsors, we are pleased to announce the addition of **Michael Sanders** as Project Management and Site Training Specialist. Michael is located near Oxford in the United Kingdom and will be supporting many of our European-based clinical trials.

Michael brings a wealth of experience to the position having spent over 20 years in the medical imaging field. He has extensive knowledge across all modalities, while specializing in neurological and vascular imaging. Prior to joining VirtualScopics, Michael spent 2.5 years as a clinical specialist with a medical device manufacturer in the UK.

Michael joins **Ian Marron** who has worked for VirtualScopics out of the UK since January 2008 as the Managing Director of European Sales. Ian came to VirtualScopics with an extensive background in sales and services developed at Kodak. Ian works with all of VirtualScopics' European-based clients and is charged with further developing the company's presence across Europe.

*You can meet Ian and other members of the VirtualScopics team at the ECCO 15—34th ESMO Congress in Berlin from September 20 - 24. VirtualScopics will be exhibiting in **Booth C51 Hall 17.***

For more information on **VirtualScopics'** technology or services, please contact Rosemary Shull, Vice President of Business Development at 585-249-6231 x206 or rosemary_shull@virtualscopics.com



Upcoming Events

EXHIBITING

ECCO 15: 15th Congress of the European Cancer Organization

Booth #C51 Hall 17

Berlin, Germany

September 20-24, 2009

ATTENDING

OARSI World Congress

Montreal, Canada

September 10-13, 2009

CBI's 3rd Annual Oncology Clinical Trial Summit

Bethesda, MD

September 14-15, 2009

ACR/ARHP Annual Scientific Meeting

Philadelphia, PA

October 16-21, 2009

Upcoming Seminars

Quantitative Imaging for Clinical Trials

Place: Boston, MA

Date: October 8, 2009

VirtualScopics will be bringing its popular seminar series to Boston this fall. The FREE 1/2 day seminar explores the benefits and hidden pitfalls of selecting and implementing quantitative imaging in multi-site oncology clinical trials.

Look for forthcoming details on our event calendar or contact Erik Jensen at erik_jensen@virtualscopics.com

Learn More at

http://www.virtualscopics.com/

Keep abreast of all the latest news, events and recent staff publications.

Ask Jon: What is the most 'IDEAL' technique for measuring Hepatic Fat Fraction?



Jon Riek, PhD. VP Technology & Product Development VirtualScopics, Inc.

Nonalcoholic fatty liver disease (NAFLD) is the most common cause of abnormal liver test results in adults in the United States. The disease is common in patients with type 2 diabetes mellitus, hyperlipidemia and obesity. As the prevalence of obesity increases, NAFLD may become the most common form of chronic liver disease.

Hepatic fat fraction can be used to quantify fatty infiltration of the liver. There are several techniques that can be used to measure hepatic fat fraction including biopsy, ultrasound, CT, MRS and MRI. Many of these techniques have distinct disadvantages or limitations. Biopsies are invasive, carry the risk of infection and biliary leakage, and are subject to sampling errors. Ultrasound is

highly operator dependent. CT involves ionizing radiation. MRS does not provide spatial information and, although available on most magnets, is still used as a research tool.

In MRI, in-phase/out-of-phase imaging and Dixon techniques do not account for the effect of iron in the liver. More recent chemical shift imaging techniques account for variations in T2* and provide more accurate hepatic fat fraction maps. One technique, T2*-IDEAL provides accurate fat and water images, but is only available on GE machines with research agreements. To calculate the values off the magnet raw data is required, although it is difficult to obtain reliably. Multiple-echo, in-phase/out-of-phase techniques can be calculated off the magnet, only requiring magnitude images, but are generally limited to 50% fat fractions. This makes them useful for calculating hepatic fat fractions, but not for general fat quantification.

RECIST 1.1 Update

In January, EORTC published the first revisions to the original RECIST criteria from 2000. Known as RECIST 1.1, these guidelines were revised to improve both the consistency of measurements and the reliability of interpretation in study trials.

Included among the changes are new guidance on imaging, specifically optimal anatomical assessment of lesions and the interpretation of FDG-PET scan assessment.

VirtualScopics has incorporated all of the revisions into our systems and protocols enabling us to conduct study trials using either RECIST 1.0 guidance, RECIST 1.1, or both.

At trial outset we'll be happy to discuss with you the guidance revisions and help you develop your protocol accordingly.

VirtualScopics' Promise - 1 Year Later

This month marks one year since we introduced the VirtualScopics Promise. We are pleased to announce we have not had to credit, nor been requested to credit, a single fee in accordance with the Promise.

The VirtualScopics Promise remains a unique guarantee in the industry and is a testimony to our continued drive to exceed our customers' expectations.

"VirtualScopics pledges to provide quality image-based biomarker deliveries according to approved specifications while adhering to our customers' contractual timelines. If this promise is not met, the applicable analysis and/or delivery fee will be credited." In other words - Quality, on-time data, or it's on us.

For more information on VirtualScopics' technology or services, please contact Rosemary Shull, Vice President of Business Development at 585-249-6231 x206 or rosemary_shull@virtualscopics.com